

# Grit and Interest: Correlates Students' Bread and Pastry Production Skills

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## Abstract

This descriptive-correlational study investigated the influence of students' grit and interest in relation to their skills in Bread and Pastry Production. The participants were the fifty Grade 9 students of BPP in a National High School in the Division of Cagayan de Oro. Questionnaires and rubric were used to gather data which would analyze using descriptive and inferential statistics. Findings of the study revealed that students' grit in terms of belief was rated high, and the courage, passion and persistence were rated moderate. Results also shows that students' interest in BPP was high. And their skills in BPP in terms of preparation, production of baked products and cleaning and maintenance of tools and equipment during their performance tasks were good. The results further show that there is significant association of students' grit and interest in BPP to their skills in BPP which implied that students who have high level of grit in all dimensions, as well as those who have high interest in the subject also tend to demonstrate high skills in BPP in terms of preparation, production of baked products and cleaning and maintenance of tools and equipment and vice versa.

**Keywords:** *Bread and Pastry Production; Grit; Interest; Skills*

## 1. Introduction

Nowadays, students lack belief, courage, passion, persistence, and interest in doing and finishing their tasks especially in Bread and Pastry Production. Students are given challenging task to hone their full potential and manifest the necessary skill in a specific task however they tend to avoid, procrastinate and be lazy in performing it that may result to a poor performance and skill acquisition. In addition, students were still confronted with challenges in learning like there is insufficient number of tools that they need to wait or used it one at a time or they need to bring their personal tools for ease, lack of finances for purchasing the needed ingredients or materials that they need to borrow money or sell their baked products beforehand just to have enough money to buy the needed ingredients or materials, and the lack of basic common competences in Bread and Pastry Production that they should acquire in their exploratory phase in Grade 7 and 8. With these scenarios, will grit and interest be important? Will grit and interest have bearing on students' skills acquisition? With these questions, the researcher decided to find the relationship of grit and interest on the skills in Technology and Livelihood Education (TLE) of Grade 9 Bread and Pastry Production students.

## Objectives of the study

This research could be a source of information to determine how the students' grit and interest in Bread and Pastry Production affect their skills.

## Statement of the problem

The study sought to answer the following questions:

1. What is the students' level of grit in terms of the following factors:
  - 1.1 belief

- 1.2. courage
- 1.3 passion
- 1.4 persistence
2. What is the students' level of interest in Bread and Pastry Production?
3. What is the students' level of skills in Bread and Pastry Production considering:
  - 3.1 preparation
  - 3.2 production of baked products
  - 3.3 cleaning and maintenance of tools and equipment
4. Are the students' grit and interest in Bread and Pastry Production significantly associated with their skills in Bread and Pastry Production?

## Theoretical Framework

This study assumes that students' grit and interest in Bread and Pastry Production subject predict their skill acquisition in the subject, implying that the higher the students' grit and interest in Bread and Pastry Production, the higher is their skill acquisition. This study is anchored on the Self-Determination Theory by Ryan and Deci (1985). This theory highlights the importance of inner resources for behavioral self-regulation (Ryan and Deci, 1985). These resources activate the individual's energy to do better, be more persistent, oriented and directed in its desires (Ryan & Deci, 2000) to perform something.

## 2. Review of Related Literature

### Grit

Grit is rooted in the field of positive psychology that gains a lot of attention in all field especially in education. Just like in the study of Duckworth and Seligman (2005) on grit which promotes the idea of probing self-discipline and IQ as predictors of academic performance. The result on their study was self-discipline excelled IQ in predicting performance that means there are additional factors exist that affects how a person perform. In addition, many researchers like Duckworth (2007), Reed, Pritschet, & Cutton (2013), Duckworth, Quinn, & Seligman (2009) and Robertson-Kraft & Duckworth (2014) studied grit in the field of education, psychology and athletics that support the existence on grit in fields of human resources, management, industrial/organizational psychology and business.

Generally, research on grit mainly concentrated in three areas which are: 1) the development of scales to measure the construct; 2) the examination of various theories and trait to give meaning to and to distinguish grit from other constructs; and 3) the investigation of grits predictive validity (Strayhorn, 2014). The first study in grit is the investigation of the concept of the construct itself, which led to the creation of a measurement scale of grit. In the development phase, there are concepts arises of grit. Like it is a type of affective trait that is stable (Duckworth and Quinn, 2009) or develop over time. This idea sets grit apart from other constructs like self-efficacy as it is based in a short period of time and more focused on a short-term task (Reed et al, 2013). This is one aspect that grit differs from the other construct.

In constructing the measurement, Duckworth began with 27 items that were divided into two dimensions of grit: perseverance in effort and consistency in interest (Duckworth et al, 2007). Later on, the shorter measure otherwise known as Short Grit Scale-Grit (S) was formulated which includes strongest concept of each aspect of the dimension (Duckworth & Quinn, 2009). On the other hand, a biographical data scale was made to assess grit levels of an individual through data from resume which usually used in school context where survey is not applicable (Robertson-Kraft & Duckworth, 2014). As mentioned, grit includes two different dimension that are highly correlated: perseverance of effort and consistency of interest (Duckworth & Quinn, 2009). According to a of Wagnild (2009), perseverance is the continuity of a person in doing something regardless of obstacles. So, perseverance is another characteristic of grit that has a great impact to the students.

Grit may have similar characteristics with some other predictors, however, most of those are focused for short-term achievement while grit focuses on long term ones. Grit lies within the family of self-regulation that predicts retention and education more than intelligence. Grit is characterized in keeping interest and extending effort in something over time which intelligence does not (Duckworth et al 2007).

Moreover, Robertson-Kraft and Duckworth (2014), distinguished grit as a different construct from resilience as resilience focuses on the ability to adapt circumstances that present difficulty and stress. The authors further theorized that while the two constructs have same components of overcoming tough times, resilience does not entail stability over time as grit does (Robertson-Kraft & Duckworth, 2014). Furthermore, the two constructs have different qualities but are somewhat related in other ways. Nevertheless, being gritty is far beyond this construct.

### Interest

Interest is a cognitive and affective motivational variable that can be developed through four phases which

indicates individuals' phase of interest. An interest could be: 1) triggered situational interest is caused by environmental factors which means that learner's attention is caused by temporary features of instant situation; 2) maintained situational interest is a kept interest caused of given situation that boosts engagement; 3) merging individual interest means that an individual has already a personal interest on the subject matter plus the reinforcement of the environment of the interest which resulted to merging; 4) well-developed individual interest signifies a settled interest on the subject matter of an individual. Though, any phase of interest development may regress or disappear altogether if there is no support from the environment (Hidi & Renninger, 2006).

Learning in each of the Four-Phase Model of Interest Development may seemed exciting but it is not an indicator of the phase of their interest (Berridge, Robinson, & Aldridge, 2009; Hidi, 2013). Instead, a learner's feelings, value, and knowledge are indicators that can predict the possibility of voluntary reengagement of a particular content over time (Renninger & Su, 2012). Interest can be triggered in all ages and phases of interest of learners with an initial interest of other variables such as novelty, challenge, surprise, complexity, and/or uncertainty (Durik & Harackiewicz, 2007; Palmer, 2009). Interest is predictive on both motivation and engagement because learners with more developed interest are likely motivated, self-regulated and goal setter, and achiever of goals for themselves (Harackiewicz, Durik, Barron, Linnenbrink, & Tauer, 2008; Hidi & Ainley, 2008). So, they identify disciplinary content of interest and related occupations based on their inclination (Krapp, 2007) that influences attention, goals and learning of an individual.

In recent researches on motivation of K-12 students shown frightening trend; students' interest in school tends to decline over time, with low achievers showing lower interest overall than high achievers (Lepper, Corpus, & Iyengar, 2005). Moreover, Hofer and Bendixen (2012) hypothesizes that age plays a critical role in the development of personal interest that it may grow or decline over the years and may change depending on the other tasks a person has to manage and goals he or she is striving for, whether short or long term. Hence, the loss of interest in school matters is important when students make the transition to secondary school. Given this reality then, the teacher's greatest challenge is to cater learners whose interest levels differ and may fluctuate from mood to mood.

### **Bread and Pastry Skills**

21<sup>st</sup> century skills are broad set of knowledge, skills, work habits and character trait that are useful in today's success (Abbott, 2015). It includes learning and innovation skills which refers to creativity, innovation, critical thinking, problem solving, communication and collaboration; and life and career skills which refers to flexibility and adaptability, and leadership and responsibility (P21 Framework Definitions, 2015). With these skills, it prepares individuals through the daily use of the skills in analyzing information, making decision and create collaborate ideas to live and work in modern life (Silva, 2009)

Skills are likely used in the context of trade, occupation and vocations which usually aimed at practical application of what is taught and learned. Practical skills acquisition is the process of obtaining knowledge of technical and practical nature (Ubong and Oguzor, 2007) that equips individual in living and making life to its betterment. In addition, learning theories on concept of knowledge is insufficient as we need to have skills to do things; technical and livelihood programs may help the students and graduates to become skilled workers of the future (Garduque, 2012).

Bread and Pastry Production has a various skill that can be developed through proper training. Three of which are the preparation, production of baked products and cleaning and maintenance. It was believed that through competency-based curriculum it is easier for the students to learn and acquired skills for it is in demonstration approach (TESDA, 2004).

Preparation skill is the ability of an individual to prepare things before making or doing an activity or task. It was believed that it is in this skill that ensure success as what a quote says: "If you fail to prepare, you prepared to fail". In Bread and Pastry Production, preparation skill is essential to ensure production of quality products. However, nowadays students have little knowledge on the importance of preparation due to lack of food preparation experience at home that resulted to unequip individuals in food preparation (Canter et al, 2007). Food preparation can be enhanced and developed through school programs or curriculum that engages individual in practical or hands-on activity in preparing the ingredients or the food itself (Hartmann et al, 2013; Lichtenstein & Ludwig, 2010; Pendergast & Dewhurt, 2012). Studies show that there is a need to provide opportunities for the students to practice and apply practical food preparation and baking skills (Caraher, 2006; O'Dea & Wilson, 2006; Slater, 2013). It was concluded that through the given opportunities there is a significant improvement in perceiving baking skills and knowledge of techniques in preparation (Beets et al, 2007). However, instruction in basic food preparation skills needs to be part of a long-term solution (Lichtenstein & Ludwig, 2010) to fully manifest the skill.

Other skill is the production of baked products that is a way of addressing the demand of the market. The higher the demand, the greater production produced. It was argued that production of baked products should ensure food safety which requires at all levels of the food chain, knowledge and skills to prevent a wide range health problem. It must follow the appropriate ingredients, used correct tools and equipment, apply appropriate mixing and baking methods to ensure high quality of baked products (Lupien, 2005).

And lastly, cleaning and maintenance of tools and equipment skills are essential practice of food safety. It is a form of sanitation management that practices necessary procedures to ensure a clean, functional and safe tools, equipment and

area for production of foods and prevention of illnesses (McConville, 2014) that must be observed all the time. Some studies link customers preference to cleanliness in choosing where to shop or eat food (McSwane et al, 2009). It was hypothesized that cleaning and maintenance of tool and equipment are indispensable that can attract customers and enhance patronage of the product.

The various studies discussed supported the researcher to have a better view of the variables that were investigated. The cited studies and literature helped in substantiating the findings of the study.

### **3. Research Design and Methodology**

#### **Respondents of the Study**

The participants of the study were the 50 Grade 9 Bread and Pastry Production students of a public school in Cagayan de Oro City for the School Year 2019-2020. These fifty students were exclusively enrolled in Bread and Pastry Production as their specialization in TLE 9.

#### **Design**

This study used the descriptive correlational research design. Moreover, the study used correlational research in order to determine the relationship of variables presented, within and among these variables. This is deemed appropriate in order to determine the significant association between the independent variables which are the students' grit and interest in Bread and Pastry Production and the dependent variable which is the students' skills Bread and Pastry Production in TLE.

#### **Research Instruments**

The study used two research instruments to determine the level of grit and interest of the participants. The True Grit Scale was adapted from Wong (2018) to determine the grit level of the participants especially their beliefs, courage, passion and persistence. The second instrument which was adapted from the Individual Interest Questionnaire of Rotgans (2015) determined the interest level of the participants in Technology and Livelihood Education especially in Bread and Pastry Production. These instruments were modified by the researcher to suit to the context of the study.

For students' skill in Bread and Pastry Production, teacher-made rubric was used to measure the skills: preparation, production of baked products and cleaning and maintenance of tools and equipment.

#### **Statistical Treatment**

Data obtained from the two sets of questionnaires and the performance results of the participants were scored and treated statistically using descriptive and correlational methods. Specifically, data obtained from problem 1, 2 and 3 used frequency, percentage and means in determining participants performance and the level of grit and interest in Bread and Pastry Production. Furthermore, problem 4 used Pearson-r to determine the significant association between the participants grit and interest in Bread and Pastry Production on their skills in Bread and Pastry Production.

### **4. Results and Discussion**

The finding may be attributed to the fact that endurance in the midst of challenges and setbacks to attend to goals was a strong motivational force that enabled them to perform well in Bread and Pastry Production.

This finding confirms Baker's (2016) postulation that gritty students overcome setbacks even when confronted with challenges; they persevere to pursue long-term goals, and face difficulties for the attainment of their goals. As the result shows that grit in terms of belief in Bread and Pastry Production is high which gives hope of having a good life in the future through acquiring the needed knowledge and skills that can be used in finding a work and putting a business related to it. In addition, grit in terms of courage, passion and persistence were moderate. It's manifested through performing task, choosing the Bread and Pastry Production as their specialization, and by not giving up on learning despite failures and setbacks related to its which enhances their skills in this specialization.

Table 1. Results of the Test of Relationship between Grit as well as Interest and Skills in Bread and Pastry Production

| SKILLS           | MEASURES            | GRIT   |         |         |              | GRIT IN<br>GENERAL | INTEREST |
|------------------|---------------------|--------|---------|---------|--------------|--------------------|----------|
|                  |                     | Belief | Courage | Passion | Persis-tence |                    |          |
| Preparation      | Pearson Correlation | .658** | .649**  | .551**  | .511**       | .646**             | .779**   |
|                  | Sig. (2-tailed)     | .000   | .000    | .000    | .000         | .000               | .000     |
| Production       | Pearson Correlation | .648** | .709**  | .601**  | .525**       | .676**             | .814**   |
|                  | Sig. (2-tailed)     | .000   | .000    | .000    | .000         | .000               | .000     |
| Assessment       | Pearson Correlation | .685** | .770**  | .650**  | .550**       | .722**             | .845**   |
|                  | Sig. (2-tailed)     | .000   | .000    | .000    | .000         | .000               | .000     |
| Cleaning         | Pearson Correlation | .700** | .768**  | .666**  | .603**       | .744**             | .867**   |
|                  | Sig. (2-tailed)     | .000   | .000    | .000    | .000         | .000               | .000     |
| OVERALL<br>SKILL | Pearson Correlation | .705** | .761**  | .649**  | .575**       | .732**             | .867**   |
|                  | Sig. (2-tailed)     | .000   | .000    | .000    | .000         | .000               | .000     |

\*significant at the 0.05 level (2-tailed)

\*\* significant at the 0.01 level (2-tailed)

Furthermore, the data also show that there is a positive association between interest in Bread and Pastry Production and to their skills in the subject in all dimensions. Their interest in the subject must have also sustained them to develop their skills because there is a goal to achieve. This was validated by the result of the interview made by the researchers that participants wanted to learn more in the subject for they want to share their learning to their parents who were working in the bakeshop. There were times that the participants together with their parents correct and enhance their knowledge on how to perform a specific baking task. Their inclination motivated them to engage in learning because they are interested in what they are learning. That interest is built upon the activities which aim to develop skills in Bread and Pastry Production. Also, according to Raj (2010) interest produce motivation directed towards a particular activity aimed at exploring interest.

## 5. Conclusion

In this study, the participants who are grittier and more interested in bread and pastry production tend to perform well in this TLE specialization. Grit and interest, which are essential components that move people to perform well in a task, have propelled the students to accomplish the tasks and competencies required in Bread and Pastry Production.

The results confirm the findings of studies that grittier students possessed certain behaviors such as not being discouraged by setbacks, maintaining focus and completing a task, being a hard worker and diligent (Duckworth, Peterson, Kelly, & Matthews, 2007; Duckworth, Quinn, & Seligman, 2009; Reed, Pritschet, & Cutton, 2013; and Robertson-Kraft & Duckworth, 2014) which are important traits in the performance of certain tasks. Furthermore, the Self-Determination Theory by Ryan and Deci (1985) was confirmed in this study. The participants who demonstrated strong belief, courage, passion, persistence, and interest to perform better in Bread and Pastry Production also manifested higher performance in this subject. In the same way, their performance in the subject must have fuelled their interest and perseverance in the choice of this area of specialization in their future career.

## 6. Recommendations

In the light of the conclusions in the study, the researchers present the following recommendations:

1. For students that they may expose themselves to opportunities that enhance their skills in Bread and Pastry

- Production as this may lead them to promising careers in this specialization.
2. For TLE teachers that they will provide intervention of students' interest through utilization of video clips and books related to bread and pastry; and skills in terms of time management in mis en place, mixing and baking techniques, packaging and waste disposal. In addition, they will consider planning, designing and implementing students' developmental training that will enhance students' grit in terms of belief, courage, passion and persistence to achieve self-realization.
  3. For researchers to explore other possible variables that have significant relationship to students' skills in Bread and Pastry Production such as time management, industry and entrepreneurial skills.

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